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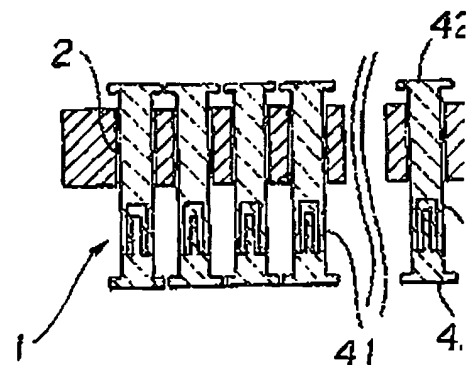
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(54) 【発明の名称】 複数のピンを有する電子部品におけるピン高さの検査方法及び検査用治具

## (57) 【要約】

【目的】 複数のピンを有する電子部品におけるピン高さの検査方法並びにそれに用いる検査用治具において、簡単かつ廉価に検査が実施できるとともに、治具のメンテナンスを容易にしたピン高さの検査方法及び検査用治具を提供することを目的としている。

【構成】 格子状に穴2を開設したブロック3と、この穴2内に挿入され、穴2に接触する部分に径方向にバネ性を有し、かつ両端に穴径よりも大径のフランジ42を形成した複数のピン4とから構成される検査用治具1を



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## 【特許請求の範囲】

【請求項 1】 格子点に複数の穴（２）を設けたブロック（３）と、ブロック（３）の厚さより長い寸法を有し、穴（２）と接触する部分（４１）が径方向にバネ性をもち、両端に穴径よりも大径のフランジ（４２）を備えた複数のピン（４）を上記穴（２）に挿入してなる検査用治具（１）を使用して、全てのピン（４）がブロック（３）の一方の面（３１）にフランジ（４２）が密着するように片寄せて、複数の接続用端子として、電子部品のピンの先端に上記検査用治具（１）のブロック（３）に密着していない方のフランジ（４２）を当て、ブロック（３）を電子部品に向かって押し付け、ピン（４）がブロック（３）の他方の面（３２）に接触しないところで中止し、その状態で複数のフランジ（４２）の高さを測定することにより、電子部品のピン高さを検査することを特徴とする電子部品におけるピン高さの検査方法。

【請求項 2】 格子点に複数の穴（２）を設けたブロック（３）と、ブロック（３）の厚さより長い寸法を有し、穴（２）内に挿入され、穴（２）と接触する部分（４１）が径方向にバネ性をもち、両端に穴径よりも大径のフランジ（４２）を有する複数のピン（４）とから構成されていることを特徴とする検査用治具。

【請求項 3】 ピン（４）は、それぞれ一側側にフランジ（４２）を形成した雄ピン（４３）と雌ピン（４４）と、雌ピン（４４）内に介装され、両ピン（４３、４４）を接合するバネ材（４５）とから構成されていることを特徴とする請求項 2 記載の検査用治具。

## 【発明の詳細な説明】

【0001】

【産業上の利用分野】 この発明は、複数のピンを有する電子部品におけるピン高さの検査方法及びそれに使用する検査用治具に関する。

【0002】

【従来の技術】 通常、複数のピンを有する電子部品において、複数のピン高さを検査する方法としては、投影法による陰影、レーザー照射による反射波の測定等による非接触式検査方法と、直接ピンに計測器の針（端子）を当て、計測器の端子に接触したときの計測器の移動距離からピン高さを測定する接触式検査方法の 2 種類があ

【0005】この発明は、このような事柄であつたもので、複数のピンを有する電子部品高さの測定に、簡単かつ廉価な構成の検査用治具を用いて、簡単にピン高さを検査できる電子部品高さの検査方法及び検査用治具を提供している。

【0006】

【課題を解決するための手段】 上記目的に、本発明に係る電子部品におけるピン高さの検査方法は、格子点に複数の穴を設けたブロックの厚さより長く、穴と接触する部分が径方向にバネ性をもち、両端に平らな板を備えた複数のピンを有する検査用治具を使用して、全ての一方の面にフランジが密着するように、複数の接続用端子として、電子部品のピンの検査用治具のブロックに密着していない方のフランジを電子部品に向かって押し付け、ブロックの他方の面に接触しないところで複数のフランジの高さを測定することにより、電子部品のピン高さを検査することを特徴とする。

【0007】更に、本発明方法に使用する検査用治具は、格子点に複数の穴を設けたブロックの厚さより長い寸法を有し、穴内に挿入される部分が径方向にバネ性を有し、両端にバネ性を有する複数のピンとから構成されている。

【0008】更に、ピンは、それぞれ一側側にフランジを形成した雄ピンと雌ピンと、雌ピン内に雌ピンを接合するバネ材とから構成されている。

【0009】

【作用】 以上の構成から明らかなように、本発明の検査用治具は、ブロックの穴径よりも大径のフランジを有しているため、ピンがブロックから抜けにくい。

【0010】また、ピンをブロックに格納配置することにより、様々な凸形状体のピンを構成することができる。

【0011】更に、ピンが短くなることにより、ピンのブレが小さくなり、堅牢性が増大するとい

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明する。

【0014】図1は本発明方法に使用する検査用治具の外観図、図2は同検査用治具の構成を示す断面図、図3は分割ピンの外観図。

【0015】図1、図2に示すように、本発明方法に使用するピン高さ検査用治具1は、格子点に複数の穴2を設けたブロック3と、ブロック3の穴2に挿入された複数のピン4とから大略構成されており、上記ピン4はブロック3の厚さより長く設定され、穴2と接触する部分41が径方向にバネ性を有し、更に両端に穴2の径より大径のフランジ42が形成されている。

【0016】更に、図3に示すように、ピン4は、雄ピン43、雌ピン44、両ピン43、44間を接合させるバネ材45とから構成されており、雄ピン43は、一端にフランジ42が形成されているとともに、段付きピン形状をしており、雌ピン44は、雄ピン43の先端を挿入できるように穴加工が施されており、バネ材45は、爪46を径方向対向側に向かい合うように形成されている。

【0017】次に、本発明による検査用治具1の具体的な構成について図4を基に説明する。

【0018】この治具1は、外寸法55W×55D（内寸法25.4W×25.4Dの窓有り）×5（mm）の中に形1.6（mm）の穴を2.54（mm）ピッチの格子状に設けた金属板からなるブロック3に、径1.5×111（mm）（両端には径2.0×0.5（mm）の蓋加工有り）の金属製のピン4を挿入した。

【0019】ブロック3は防錆、加工の容易さ等を考慮し、黄銅を使用した。

【0020】ピン4は、雄ピン43、雌ピン44共に材質に黄銅／ニッケル下地鍍めっきを使用した。

【0021】雄ピン43は、一端を径2.4×0.5（mm）のフランジ加工、他端を径0.5×3.0（mm）と細かくした径1.5（mm）、全長5.5（mm）の段付きピンとした。

【0022】また、雌ピン44は、一端を径2.0×0.5（mm）の蓋加工、他端を内径1.0×3.5深さ（mm）の穴加工とした径1.5（mm）、全長8.0（mm）のピンとした。

【0023】バネ材45は、ベリリウム銅／ニッケル下

で、電子部品におけるピン高さを検査するピン4がブロック3の一方の面31に摩擦するようにピン4を片寄せ、複数のピンの先端に、治具1のブロック3に密着の反対側のフランジ42を当て、ブロック3に向かって押し付ければ、ピン4がブロック32に接触しないところで中止し、そのピン4のフランジ42の高さを測定する電子部品のピン高さを検査することができ

【0025】

【発明の効果】以上説明した通り、本発明の検査方法並びに検査用治具によれば、高さ、BGAのボール高さ、コネクタの形状体の高さを検査する場合、それぞれが治具内のピン高さとなって表れるため、測定機（三次元測定機等）で測定するを一度で検査することができるとともに、簡便である。

【0026】更に、電気、エア等のエを必要としないため、測定装置が複雑と選ばない、万一故障した際もピンの交換メンテナンスも容易であり、格子状にことにより様々な測定体に対して使用で効果を有する。

【図面の簡単な説明】

【図1】本発明によるピン高さ検査用治具の外観図。

【図2】図1に示す検査用治具の構成を示す断面図。

【図3】本発明による検査用治具に使用する外観図。

【図4】本発明による検査用治具の一実施例の外観図。

【符号の説明】

1 検査用治具

2 穴

3 ブロック

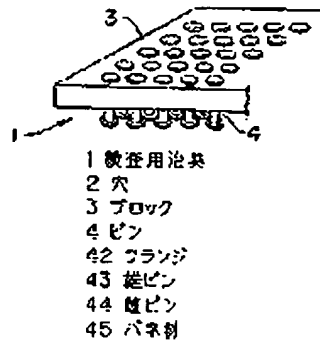
4 ピン

42 フランジ

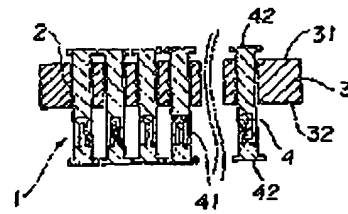
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【図 1】



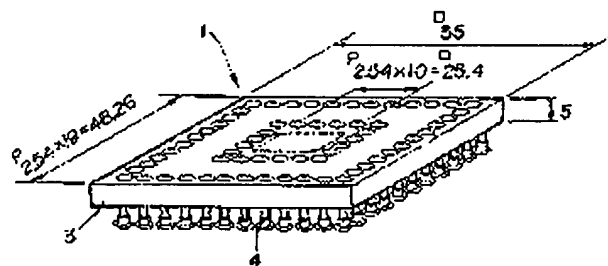
【図 2】



【図 3】



【図 4】



## PATENT ABSTRACTS OF JAPAN

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(71)Applicant : HITACHI CHEM CO LTD

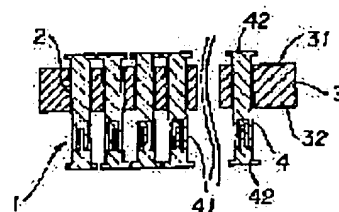
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(72)Inventor : DOKOCHI HISASHI  
OZAWA FUMIO  
SATO NOBUYUKI**(54) METHOD AND JIG FOR INSPECTION OF PIN HEIGHT OF ELECTRONIC COMPONENT COMPRISING PLURALITY OF PINS**

(57)Abstract:

PURPOSE: To provide a method and a jig for inspecting the height of pin of an electronic component, in which the inspection can be executed simply and at a low cost and in which the maintenance of the jig can be made easy in the inspection method for the pin height in an electronic component comprising a plurality of pins, and in the jig for inspection, which is used for it.

CONSTITUTION: The jig 1 for inspection constituted of a block 3 in which holes 2 have been opened and made into a lattice shape, and of a plurality of pins 4 which have a springy property in the radial direction in parts coming into contact with the holes 2 and in which flanges 42 having a diameter larger than the diameter of every hole have been formed at both ends is used. Every flange 42 on one side 31 is pressed to one face of the block 3 so as to come into close contact with it, every flange 42 on the other side is brought into contact with the tip of every pin for an electronic component as an inspection object, the block 3 is pressed to the side of the electronic component, the height of every flange 42 on the other side, i.e., every flange 42 on the side not coming into contact with every pin for the electronic component, is inspected, and the height of every pin is measured.



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CLAIMS

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[Claim(s)]

[Claim 1] It has a dimension longer than the thickness of the block (3) which prepared two or more holes (2) at the lattice point, and a block (3). The part (41) in contact with a hole (2) has spring nature in the direction of a path, and the checking fixture (1) which comes to insert in the above-mentioned hole (2) two or more pins (4) which equipped both ends with the flange (42) of a major diameter rather than the bore diameter is used. All pins (4) put aside so that a flange (42) may stick to one field (31) of a block (3). As two or more terminals for connection The flange (42) of the direction which has not been stuck to the block (3) of the above-mentioned checking fixture (1) is applied at the tip of the pin of electronic parts. By forcing a block (3) toward electronic parts, stopping by the place where a pin (4) does not contact the field (32) of another side of a block (3), and measuring the height of two or more flanges (42) in the condition The inspection approach of the pin height in the electronic parts characterized by inspecting the pin height of electronic parts.

[Claim 2] The checking fixture characterized by consisting of two or more pins (4) which have a dimension longer than the thickness of the block (3) which prepared two or more holes (2) at the lattice point, and a block (3), and it is inserted into a hole (2), and the part (41) in contact with a hole (2) has spring nature in the direction of a path, and have the flange (42) of a major diameter rather than a bore diameter to both ends.

[Claim 3] A pin (4) is a checking fixture according to claim 2 characterized by consisting of spring material (45) which is infixed into a female pin (44) and joins both pins (43 44) to the male pin (43) and female pin (44) which formed the flange (42) in the end side, respectively.

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**DETAILED DESCRIPTION**

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[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the checking fixture used for the inspection approach of pin height and it in the electronic parts which have two or more pins.

[0002]

[Description of the Prior Art] Usually, in the electronic parts which have two or more pins, as an approach of inspecting two or more pin height, the needle (terminal) of a measuring instrument is applied to the non-contact type inspection approach by measurement of the reflected wave by shading by projection, and laser radiation etc., and a direct pin, and there are two kinds of the contact process inspection approaches which measure pin height from the migration length of the measuring instrument when contacting the terminal of a measuring instrument.

[0003]

[Problem(s) to be Solved by the Invention] Except projection, the shape of a semicircle, and since it was sharp, height changed [ the tip configuration of a pin ] with point of measurement, and there was a trouble that it was difficult to measure the height of the maximum crowning at once among the above-mentioned inspection approaches.

[0004] Moreover, in the inspection approach by projection, in order to inspect height by shading, the measurement part needed to be scanned and there was a trouble that a measuring device complicated needing utilities, such as electrical and electric equipment and air, etc.

[0005] This invention was made in view of such a situation, uses the checking fixture of a configuration easy for measurement of the pin height in the electronic parts which have two or more pins, and cheap, and aims at offering the inspection approach of pin height and checking fixture in the electronic parts which can inspect pin height easily.

[0006]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, the inspection approach of the pin height in the electronic parts concerning this invention It is longer than the thickness of the block which prepared two or more holes at the lattice point, and a block, the part in contact with a hole has spring nature in the direction of a path, and the checking fixture which comes to insert in the above-mentioned hole two or more pins which equipped both ends with the even plate is used. It puts aside so that a flange may stick to one field of a block of all pins. As two or more terminals for connection The flange of the direction which has not been stuck to the block of the above-mentioned checking fixture is applied at the tip of the pin of electronic parts. It is characterized by inspecting the pin height of electronic parts by forcing a block toward electronic parts, stopping by the place where a pin does not contact the field of another side of a block, and measuring the height of two or more flanges in the condition.

[0007] Furthermore, the checking fixture used for this invention approach is characterized by consisting of two or more pins which have a dimension longer than the thickness of the block which prepared two or more holes at the lattice point, and a block, and it is inserted into a hole, and the part in contact with a



hole has spring nature in the direction of a path, and have an even flange to both ends.

[0008] Furthermore, a pin is infixed into the male pin and female pin which formed the flange in the end side, respectively, and a female pin, and is characterized by consisting of spring material which joins both pins.

[0009]

[Function] Since the flange of a major diameter is attached in the both ends of a pin rather than the bore diameter of a block so that clearly from the above configuration, a pin does not fall out from a block.

[0010] Moreover, height inspection of various convex configuration objects is attained by arranging a pin regularly in the shape of a grid to a block.

[0011] Furthermore, while it is comparatively soft, and an accurate inspection is attained since pressure may be weak when pin weight becomes light, while Bure at the time of sliding becomes small and being able to eliminate the life-shortening factor of a wear \*\*\*\* lump, when a pin becomes short, it can prevent receiving damage in a convex configuration object.

[0012] Moreover, exchange becomes easy by considering a pin as a division configuration, it escapes by using spring material for junction at a male pin and a female pin, and prevention can be aimed at.

[0013]

[Example] Hereafter, the inspection approach of the pin height in the electronic parts concerning this invention and the example of a checking fixture are explained to a detail.

[0014] The external view of the checking fixture which uses drawing 1 for this invention approach, the sectional view in which drawing 2 shows the configuration of this checking fixture, and drawing 3 are the external view of a division pin.

[0015] As shown in drawing 1 and drawing 2, the pin height checking fixture 1 used for this invention approach The profile configuration is carried out from the block 3 which formed two or more holes 2 at the lattice point, and two or more pins 4 inserted in the hole 2 of block 3. The above-mentioned pin 4 is set up for a long time than the thickness of block 3, the part 41 in contact with a hole 2 has spring nature in the direction of a path, and the flange 42 of a major diameter is further formed in both ends rather than the path of a hole 2.

[0016] As shown in drawing 3, the pin 4 consists of the male pin 43, a female pin 44, both pins 43, and spring material 45 to which between 44 is joined. Furthermore, the male pin 43 While the flange 42 is formed in the end, the stepped-pin configuration is carried out, and hole processing is carried out the degree so that the female pin 44 can insert the tip of the male pin 43, and the spring material 45 is formed so that the direction opposite side of a path may be faced in a pawl 46.

[0017] Next, the concrete configuration of the checking fixture 1 by this invention is explained based on drawing 4.

[0018] This fixture 1 inserted the metal pin 4 of a path 2.0x0.5 (those of mm) with lid processing) in the block 3 which consists of a metal plate which prepared the hole of a form 1.6 (mm) in the shape of [ of 2.54 (mm) pitches ] a grid outside into dimension 55Wx55D(those of inside dimension method 25.4Wx25.4D with aperture) x5(mm) in path 1.5x111(mm) (both ends).

[0019] The block 3 used brass in consideration of rust proofing, the ease of processing, etc.

[0020] As for the pin 4, the male pin 43 and the female pin 44 used brass / nickel substrate tinning for the quality of the material.

[0021] The male pin 43 made flange processing of a path 2.4x0.5 (mm), and the other end the shoulder pin of a path 0.5x3.0 (mm), the path 1.5 (mm) made fine, and an overall length 5.5 (mm) for the end.

[0022] Moreover, the female pin 44 was used as the pin of a path 1.5 (mm) and an overall length 8.0 (mm) by which the end was considered as lid processing of a path 2.0x0.5 (mm), and it considered the other end as hole processing of the bore 1.0x3.5 depth (mm).

[0023] The spring material 45 shall use beryllium copper / nickel substrate gilding, and, also geometrically, shall have spring nature by performing click processing.

[0024] Subsequently, in order to use the checking fixture 1 of the above-mentioned configuration and to inspect the pin height in electronic parts All the pins 4 put aside a pin 4 so that a flange 42 may stick to one field 31 of block 3. If it considers as two or more terminals for connection, the flange 42 of the

opposite side of the direction which has not been stuck to the block 3 of a fixture 1 is applied at the tip of the pin in electronic parts equipped with the pin which has fixed die length and block 3 is forced toward electronic parts. The pin height of electronic parts can be inspected by stopping by the place where a pin 4 does not contact the field 32 of another side of block 3, and measuring the height of the flange 42 of two or more pins 4 in the condition.

[0025]

[Effect of the Invention] According to the checking fixture, in the inspection approach list of the pin height concerning this invention as explained above. Since the height of each maximum crowning appears that it is \*\*\*\*\* in the pin height in a fixture when inspecting height of a convex configuration object, such as pin height of PGA, ball height of BGA, and pin height of a connector, If this pin height is measured with measurement machines (three dimensional measurer etc.), while being able to inspect pin height by once, structure is also easy and cheap.

[0026] Furthermore, since utilities, such as electrical and electric equipment and Ayr, are not needed, it has various effectiveness -- also when a measuring device should break down [ which does not become complicated and does not choose a location ], exchange of a pin is also easy, maintenance is also easy, and it can be used to various measurement objects by arranging a pin in the shape of a grid.

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TECHNICAL FIELD

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[Industrial Application] This invention relates to the checking fixture used for the inspection approach of pin height and it in the electronic parts which have two or more pins.

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PRIOR ART

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[Description of the Prior Art] Usually, in the electronic parts which have two or more pins, as an approach of inspecting two or more pin height, the needle (terminal) of a measuring instrument is applied to the non-contact type inspection approach by measurement of the reflected wave by shading by projection, and laser radiation etc., and a direct pin, and there are two kinds of the contact process inspection approaches which measure pin height from the migration length of the measuring instrument when contacting the terminal of a measuring instrument.

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EFFECT OF THE INVENTION

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[Effect of the Invention] According to the checking fixture, in the inspection approach list of the pin height concerning this invention as explained above Since the height of each maximum crowning appears that it is \*\*\*\*\* in the pin height in a fixture when inspecting height of a convex configuration object, such as pin height of PGA, ball height of BGA, and pin height of a connector, If this pin height is measured with measurement machines (three dimensional measurer etc.), while being able to inspect pin height by once Structure is also easy and cheap.

[0026] Furthermore, since utilities, such as electrical and electric equipment and Ayr, are not needed, it has various effectiveness -- also when a measuring device should break down [ which does not become complicated and does not choose a location ], exchange of a pin is also easy, maintenance is also easy, and it can be used to various measurement objects by arranging a pin in the shape of a grid.

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TECHNICAL PROBLEM

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[Problem(s) to be Solved by the Invention] Except projection, the shape of a semicircle, and since it was sharp, height changed [ the tip configuration of a pin ] with point of measurement, and there was a trouble that it was difficult to measure the height of the maximum crowning at once among the above-mentioned inspection approaches.

[0004] Moreover, in the inspection approach by projection, in order to inspect height by shading, the measurement part needed to be scanned and there was a trouble that a measuring device complicated needing utilities, such as electrical and electric equipment and air, etc.

[0005] This invention was made in view of such a situation, uses the checking fixture of a configuration easy for measurement of the pin height in the electronic parts which have two or more pins, and cheap, and aims at offering the inspection approach of pin height and checking fixture in the electronic parts which can inspect pin height easily.

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**MEANS**

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[Means for Solving the Problem] In order to attain the above-mentioned purpose, the inspection approach of the pin height in the electronic parts concerning this invention It is longer than the thickness of the block which prepared two or more holes at the lattice point, and a block, the part in contact with a hole has spring nature in the direction of a path, and the checking fixture which comes to insert in the above-mentioned hole two or more pins which equipped both ends with the even plate is used. It puts aside so that a flange may stick to one field of a block of all pins. As two or more terminals for connection The flange of the direction which has not been stuck to the block of the above-mentioned checking fixture is applied at the tip of the pin of electronic parts. It is characterized by inspecting the pin height of electronic parts by forcing a block toward electronic parts, stopping by the place where a pin does not contact the field of another side of a block, and measuring the height of two or more flanges in the condition.

[0007] Furthermore, the checking fixture used for this invention approach is characterized by consisting of two or more pins which have a dimension longer than the thickness of the block which prepared two or more holes at the lattice point, and a block, and it is inserted into a hole, and the part in contact with a hole has spring nature in the direction of a path, and have an even flange to both ends.

[0008] Furthermore, a pin is infixed into the male pin and female pin which formed the flange in the end side, respectively, and a female pin, and is characterized by consisting of spring material which joins both pins.

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OPERATION

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[Function] Since the flange of a major diameter is attached in the both ends of a pin rather than the bore diameter of a block so that clearly from the above configuration, a pin does not fall out from a block.

[0010] Moreover, height inspection of various convex configuration objects is attained by arranging a pin regularly in the shape of a grid to a block.

[0011] Furthermore, while it is comparatively soft, and an accurate inspection is attained since pressure may be weak when pin weight becomes light, while Bure at the time of sliding becomes small and being able to eliminate the life-shortening factor of a wear \*\*\*\* lump, when a pin becomes short, it can prevent receiving damage in a convex configuration object.

[0012] Moreover, exchange becomes easy by considering a pin as a division configuration, it escapes by using spring material for junction at a male pin and a female pin, and prevention can be aimed at.

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## EXAMPLE

[Example] Hereafter, the inspection approach of the pin height in the electronic parts concerning this invention and the example of a checking fixture are explained to a detail.

[0014] The external view of the checking fixture which uses drawing 1 for this invention approach, the sectional view in which drawing 2 shows the configuration of this checking fixture, and drawing 3 are the external view of a division pin.

[0015] As shown in drawing 1 and drawing 2, the pin height checking fixture 1 used for this invention approach The profile configuration is carried out from the block 3 which formed two or more holes 2 at the lattice point, and two or more pins 4 inserted in the hole 2 of block 3. The above-mentioned pin 4 is set up for a long time than the thickness of block 3, the part 41 in contact with a hole 2 has spring nature in the direction of a path, and the flange 42 of a major diameter is further formed in both ends rather than the path of a hole 2.

[0016] As shown in drawing 3, the pin 4 consists of the male pin 43, a female pin 44, both pins 43, and spring material 45 to which between 44 is joined. Furthermore, the male pin 43 While the flange 42 is formed in the end, the stepped-pin configuration is carried out, and hole processing is carried out the degree so that the female pin 44 can insert the tip of the male pin 43, and the spring material 45 is formed so that the direction opposite side of a path may be faced in a pawl 46.

[0017] Next, the concrete configuration of the checking fixture 1 by this invention is explained based on drawing 4.

[0018] This fixture 1 inserted the metal pin 4 of a path 2.0x0.5 (those of mm) with lid processing) in the block 3 which consists of a metal plate which prepared the hole of a form 1.6 (mm) in the shape of [ of 2.54 (mm) pitches ] a grid outside into dimension 55Wx55D(those of inside dimension method 25.4Wx25.4D with aperture) x5(mm) in path 1.5x111(mm) (both ends.

[0019] The block 3 used brass in consideration of rust proofing, the ease of processing, etc.

[0020] As for the pin 4, the male pin 43 and the female pin 44 used brass / nickel substrate tinning for the quality of the material.

[0021] The male pin 43 made flange processing of a path 2.4x0.5 (mm), and the other end the shoulder pin of a path 0.5x3.0 (mm), the path 1.5 (mm) made fine, and an overall length 5.5 (mm) for the end.

[0022] Moreover, the female pin 44 was used as the pin of a path 1.5 (mm) and an overall length 8.0 (mm) by which the end was considered as lid processing of a path 2.0x0.5 (mm), and it considered the other end as hole processing of the bore 1.0x3.5 depth (mm).

[0023] The spring material 45 shall use beryllium copper / nickel substrate gilding, and, also geometrically, shall have spring nature by performing click processing.

[0024] Subsequently, in order to use the checking fixture 1 of the above-mentioned configuration and to inspect the pin height in electronic parts All the pins 4 put aside a pin 4 so that a flange 42 may stick to one field 31 of block 3. If it considers as two or more terminals for connection, the flange 42 of the opposite side of the direction which has not been stuck to the block 3 of a fixture 1 is applied at the tip of the pin in electronic parts equipped with the pin which has fixed die length and block 3 is forced toward electronic parts The pin height of electronic parts can be inspected by stopping by the place

where a pin 4 does not contact the field 32 of another side of block 3, and measuring the height of the flange 42 of two or more pins 4 in the condition.

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DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] The partial external view showing the pin height checking fixture by this invention.

[Drawing 2] The fragmentary sectional view showing the configuration of the checking fixture shown in drawing 1 .

[Drawing 3] The external view showing the division pin used for the checking fixture by this invention.

[Drawing 4] The external view showing the configuration of one example of the checking fixture by this invention.

[Description of Notations]

1 Checking Fixture

2 Hole

3 Block

4 Pin

42 Flange

43 Male Pin

44 Female Pin

45 Spring Material

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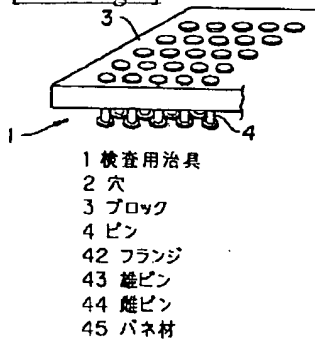
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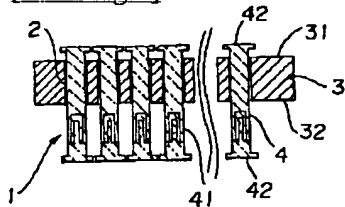
DRAWINGS

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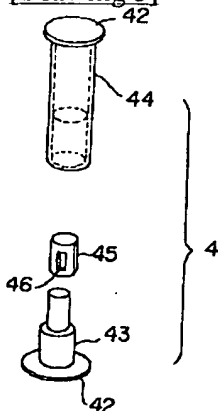
[Drawing 1]



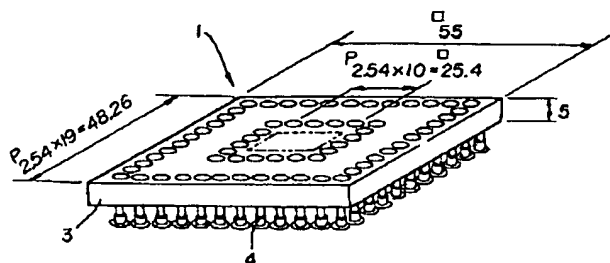
[Drawing 2]



[Drawing 3]



[Drawing 4]




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[Translation done.]